MATERIAL SAFETY DATA SHEET

MSDS

Shock Plus (Aqua Chem)

Date-Issued:01/20/1997
MSDS Ref. No:RAQU22816
***Date-Revised:*03/14/2003**
Revision No:11

1. *PRODUCT AND COMPANY IDENTIFICATION*

PRODUCT NAME: Shock Plus (Aqua Chem)
GENERAL USE: Swimming pool oxidizer, buffer, clarifier and flocculant.

MANUFACTURER
Recreational Water Products
Aqua Chem
PO Box 1449
Buford, GA 30515-1449
***Customer SERVICE:** (800) 949-7946*

24 HR EMERGENCY TELEPHONE NUMBERS
CHEMTREC (Transportation) (800) 424-9300
Poison Control Center (Medical) (877) 800-5553

COMMENTS: EPA Registration Number: 67262-27

2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt%
Sodium dichloro-s-triazinetrione	2893-78-9	58.2

3. *HAZARDS IDENTIFICATION*

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: White, granular material

IMMEDIATE CONCERNS: DANGER: Corrosive: Causes irreversible eye damage. Do not breath dust; may be harmful if inhaled. Harmful if swallowed or absorbed through skin. Do not get in eyes, on skin or on clothing. Causes skin irritation. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wear protective eyewear (safety glasses). Wash thoroughly with soap and water after handling product. Remove contaminated clothing and wash clothing before reuse.

POTENTIAL HEALTH EFFECTS

EYES: Corrosive. Causes irreversible eye damage.

SKIN: Causes skin irritation. Avoid contact with skin.

SKIN ABSORPTION: Harmful if absorbed through skin.

INGESTION: Harmful if swallowed.

INHALATION: May be harmful if inhaled. Avoid breathing dust.

CHRONIC: This product contains a boron compound. This boron compound, when fed to test animals at very high doses, has shown *reproductive and developmental toxicity. When this product is used according to label directions, the boron compound in this product does* not represent a practical risk to man.

ROUTES OF ENTRY: Skin Contact, Inhalation, Ingestion, Eye Contact.

4. FIRST AID MEASURES

EYES: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

SKIN: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison

control center or doctor for treatment advise.

INGESTION: If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

INHALATION: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call poison control center or doctor for treatment advice.

NOTES TO PHYSICIAN: *Probable mucosal damage may contraindicate the use of gastric lavage.*

5. FIRE FIGHTING MEASURES

GENERAL HAZARD: This product should not be exposed to external heat sources. Excessive heat may cause decompostion with the potential evolution of heat and noxious gases.

EXTINGUISHING MEDIA: Water Fog

HAZARDOUS COMBUSTION PRODUCTS: If allowed to reach temperatures resulting in decomposition and/or combustion, this product will liberate noxious chlorine gases.

OTHER CONSIDERATIONS:

Oxidizer Test Results:
This product was not classified as an oxidizer when tested by the UN Oxidizer Test 0.1. This same procedure is used by the U.S. Department of Transportation to evaluate potential oxidizers (Oxidizer Test, Section 173, Appendix F of the Code of Federal Regulations).

Fire Resistance Test Results:
This product was exposed to a medium size fire and did not increase the fire's heat release rate as is the case with a typical Class 1 and Class 2 oxidizer. The low temperatures observed during this product's burn, as compared to the wood crib alone, show that *this product does not* increase the burning rate. When packaged, this product has the combustion properties of its packaging materials and does not accelerate or increase the rate of burning of typical packaging/shipping materials such as wood, corrugated paper and plastic bags. In this study, 38 pounds of this product were place on top of a 50 pound wooden crib that was ignited with gasoline saturated cotton.

Large Scale Burn Study:
A large-scale burn study with this product (864 lb / 393 kg), at an independent laboratory, resulted in the conclusion that the behavior of this products was consistent with the behavior of an ordinary combustible. Appropriate fire fighter safety precautions should be followed, including use of SCBA, to prevent exposure to smoke due to presence of chlorine species. This study was performed in an environment that models retail space and sprinkler protection with a second product in the set.

Class 4.1 Flammable Solid Test Results:
This product does not maintain ignition when exposed to a gas burner under the conditions on the UN Class 4.1 Preliminary Screen Test and thus is not considered a Division 4.1 Flammable Solid. As a result of these favorable results, a UN Class 4.1 Burn Rate Test is not required.

Class 4.2 Self-Heating Test Results:
This product was tested under the Guidelines for the Classification and Packing Group Assignment (49 CFR Part 173 Appendix E, 1992) for Division 4.2 Self Heating Oven Test. The temperature of this product did not exceed the 200C oven temperature during the 24 hour test and did not self ignite.

Class 4.3 Dangerous When Wet Test Results:
This product was tested under the Guidelines for the Classification and Packing Group Assignment (49 CFR Part 173 Appendix E, 1992) for Division 4.3 "Dangerous when Wet" classification. This product did not evolve significant quantities of gas and did not spontaneously ignite during any of the tests performed with distilled water. *The quantity of gas evolved from 2.5 g of product over a 72-hour period was less than 10* cm3.

Dust Explositivity:
This product does not pose a dust explosion risk based on the Hartmann Dust Explodibility Bomb Test designed by the U.S. Bureau of Mines. *In addition, this product is not sensitive to impact based on the Drop Weight Test method.*

EXPLOSION HAZARDS: This product does not pose an immediate explosion hazard.

FIRE FIGHTING PROCEDURES: Firefighters should wear full protective clothing and self contained breathing apparatus (SCBA). Throughly decontaminate fire fighting equipment including all fire fighting wearing apparel after the incident.

HAZARDOUS DECOMPOSITION PRODUCTS: In the event of a decomposition and/or fire, extinguished material should be isolated. Any spilled material from burned or damaged containers should be assumed contaminated. Neutralize contaminated material to a non-oxidizing state for safe handling and disposal. To minimize unforeseen pressure buildup, do not attempt to re-close (seal) damaged containers of product.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: For small spills, scoop up and place product in pool or spa water, then flood spilled area with large volumes of water.

GENERAL PROCEDURES: STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Using appropriate protective clothing and safety equipment, contain spilled material. Do not add water to spilled material. Using clean dedicated equipment, sweep and scoop all spilled material, contaminated soil, and other contaminated material and place into clean dry containers for disposal. Do not use floor sweeping compounds to clean up spills. Do not close containers containing wet or damp material. They should be left open to disperse any hazardous gases that may form. Do not transport wet or damp material. Keep product out of sewers, watersheds and water systems. Dispose of according to local, state and federal regulations.

7. HANDLING AND STORAGE

HANDLING: This product contains OXIDIZING AGENTS. Do not mix with other chemicals or allow this product to become contaminated with organic materials or other chemicals that could lead to product decomposition and/or fire. Mix only with water. Never add water to this product. Always add product to large volumes of water. Use clean dry utensils. Do not add this product to any dispensing device (chemical feeder, etc.) containing remnants of any other product.

STORAGE: Keep this product in its original container when not in use. Store in cool, dry, well-ventilated area. Keep this product and all other chemicals out of children's reach.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		SUPPLIER OEL	
		ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3
Sodium dichloro-s-triazinetrione	TWA	N/E[1]		N/E			

OSHA TABLE COMMENTS:

1. N/E = Not Established

ENGINEERING CONTROLS: General room ventilation plus local exhaust should be used to minimize exposure to dust/vapors.

PERSONAL PROTECTIVE EQUIPMENT:

EYES AND FACE: *Wear goggles or safety glasses with side shields when handling this product.*

SKIN: Wear rubber gloves when handling this product. Avoid contact with skin.

RESPIRATORY: Respirator protection is not normally required under routine use conditions. If product is used in an area with poor ventilation or dust is expected, a respirator that meets OSHA/ANSI standards may be required.

WORK HYGIENIC PRACTICES: Remove and wash contaminated clothing before reuse.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid
ODOR: Chlorine

APPEARANCE: Granules
COLOR: White
pH: 5.0 to 5.5
VAPOR PRESSURE: Not Determined
VAPOR DENSITY: Not Determined
BOILING POINT: Not Applicable
MELTING POINT: 272°C (522°F)
SOLUBILITY IN WATER: 25g/100g water
SPECIFIC GRAVITY: 0.9960 g/ml

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: High temperature. Poor ventilation. Contamination. Moisture/high humidity.

STABILITY: This product is stable under normal conditions.

POLYMERIZATION: Hazardous polymerization will not occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Halogen containing gases can be produced.

INCOMPATIBLE MATERIALS: Avoid contact with water on concentrated material in the container. Avoid contact with easily oxidizable material. Ammonia, urea, or similar nitrogen containing compounds. Inorganic reducing compounds. Floor sweeping compounds. Other swimming pool/spa chemicals in their concentrated forms. Do not mix with calcium hypochlorite.

COMMENTS:

Self Accelerated Decomposition Temperature (SADT) Test Results:
This product passed a "Self Accelerated Decomposition Test" to show that the product is stable and resistant to exposure to high temperatures for extended periods of time as described under the UN Recommendations of the Transport of Dangerous Goods (paragraph 1.27.6, page 194, 2nd Edition, 1990). This product was stable at 75C (167F) throughout the seven day test. In separate tests, this poduct was stable in SADT experiments at 50C and 54C.

Stability to Contaminants:
This product exhib.ted no exotherm (heat release), at an elevated temperature (93C or 200F), when mixed with typical hydrocarbons and synthetic-based oils. A mild exotherm was observed when mixed with water. However, the magnitude of the exotherm does not present an ignition hazard.

Steel & Aluminum Corrosion:
This product is not classified as corrosive to steel nor aluminum since the corrosion rate did not exceed 0.250 in/yr for either metal. The test was conducted at 55C on a steel coupon (3" x 1") for four days. There was a weight loss of 0.0341 grams and 0.0003 grams, which amounts to a corrosion rate of 0.00304 in/year and 0.00006 in/year, respectively for steel and aluminum.

11. TOXICOLOGICAL INFORMATION

ACUTE

DERMAL LD_{50}: ~5000 mg/kg of body weight in rats.

ORAL LD_{50}: The Oral LD 50 for this product is 599 mg/kg in female albino rats and 862 mg/kg in male albino rats.

EYE EFFECTS: Causes irreversible eye damage.

SKIN EFFECTS: Causes skin irritation.

SENSITIZATION: This product is a skin sensitizer.

CARCINOGENICITY:

This product is not listed as a carcinogen by IARC.

This product is not listed as a carcinogen by NTP.

This product is not listed as a carcinogen by OSHA.

GENERAL COMMENTS: This product is not a mutagen or teratogen.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Pesticide wastes are toxic. Improper disposal of excess pesticide or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance. Do not contaminate water, food, or feed by storage or disposal or cleaning of equipment. Do not put product, spilled product, or filled or partially filled containers into the trash or waste compactor. Contact with incompatible materials could cause a reaction or fire.

EMPTY CONTAINER: Do not reuse container. Rinse thoroughly before discarding in trash.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Not Regulated as a DOT Hazardous Material

OTHER SHIPPING INFORMATION: Bill of Lading Description - Compounds, Swimming Pool, Cleaning or Water Treating, Dry or Liquid (NMFC 50086)

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES:

FIRE: NO **PRESSURE GENERATING:** NO **REACTIVITY:** NO **ACUTE:** YES **CHRONIC:** NO

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: This product contains a listed CERCLA Hazardous Substance with a reportable quantity of 5,000 lb.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: This product or its components are not subject to export notification.

TSCA STATUS: This product or its components are listed on the TSCA Inventory.

OSHA HAZARD COMM. RULE: Product is hazardous by definition of the Hazardous Communication Standard.

CLEAN WATER ACT: This product contains an aluminum salt which is listed as a Clean Water Act Section 311 Hazardous Substance.

FIFRA (FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT): This product is a registered pesticide.

16. OTHER INFORMATION

REVISION SUMMARY *Revision #: 11*

This MSDS replaces the July 01, 1999 MSDS. Any changes in information are as follows:
In Section 4
Firstaid - Eyes Firstaid - Skin Firstaid - Ingestion Firstaid - Inhalation

In Section 5
Other Conditions General Hazards

In Section 10
Incompatible Materials Section 10 Footnotes

In Section 14
DOT Proper Shipping Name

HMIS RATING

HEALTH:	3
FLAMMABILITY:	1
PHYSICAL HAZARD:	1
PERSONAL PROTECTION:	B

NFPA RATING

HEALTH:	3
FIRE:	1
REACTIVITY:	1

Key
4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

MANUFACTURER DISCLAIMER: IMPORTANT: This information is given without a warranty or guarantee. No suggestions for use are intended or shall be construed as a recommendation to infringe any existing patents or violate any Federal, State or local laws. Safe handling and use is the responsibility of the customer. Read the label before using this product. This information is true and accurate to the best of our knowledge.